

**REMARKS**

This is a full and timely response to the outstanding Final Office Action mailed May 8, 2003. Claims 5, 6, 9, 12, 13, 15 - 19, and 22 have been cancelled without prejudice, waiver, or disclaimer. Claims 3, 14, 20, and 21 were previously canceled without prejudice, waiver, or disclaimer. Claims 1, 4, 7, 8, 10, and 11 have been amended. The subject matter of amended claims 1, 4, 7, 8, 10, and 11 is contained within FIGs. 4 – 13 and the related detailed description of the specification. Consequently, no new matter has been added. Upon entry of the amendments in this response, claims 1, 2, 4, 7, 8, 10, and 11 remain pending. Claims 1, 2, 4, 7, 8, 10, and 11 are patentable over the cited art of record. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

**I. Drawing Objections**

The Office Action indicates that FIGs. 1 and 2A-2D should be designated with a legend such as “prior art” because they are cited in the description of related art as a traditional encoding. Applicant has amended FIGs. 1 and 2A-2D to include the legend “prior art.” Thus, the objection to FIGs. 1 and 2A-2D should be withdrawn.

**II. Claim Rejections Under 35 U.S.C. 112**

**A. Statement of the Rejection**

The Office Action indicates that claims 7-18 stand rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failure to point out and distinctly claim the subject matter which applicant regards as the invention.

**B. Discussion of the Rejection**

Applicant has canceled claims 9, 12, 13, and 15 - 18. Claim 14 was canceled in a previous amendment. Consequently, the rejection of claims 9, and 12 - 18 is rendered moot. Applicant respectfully traverses the rejection of claims 7, 8, 10, and 11. The test for definiteness is whether one skilled in the art would understand the bounds of the claim when read in light of the specification. 35 U.S.C. 112 demands no more.

In this regard, the Office Action alleges that claim 7 is “generating an intermediate value.” For at least the reason that there is no requirement under §112

limiting a claim from generating an intermediate value, Applicant submits that the rejection of claim 7 is misplaced. Consequently, the rejection of claim 7 should be withdrawn.

The Office Action alleges that claim 13 suffers from the same problem as claim 7. Applicant has canceled claim 13. Thus, the rejection of claim 13 is rendered moot.

Regarding claim 8, the Office Action alleges that the claim does not set forth any steps involved in the method for utilizing the result. For at least the reason that there is no requirement under §112 for a claim to set forth the steps in a method for utilizing a result or steps delimiting how the use is practiced, Applicant submits that the rejection of claim 8 is misplaced. Consequently, the rejection of claim 8 should be withdrawn.

Because claims 10 and 11 depend from claim 7, the rejection of these claims under 35 U.S.C. §112 is also misplaced. Consequently, the rejection of claims 10 and 11 should also be withdrawn.

### **III. Claim Rejections Under 35 U.S.C. 102**

#### **A. Statement of the Rejection**

The Office Action indicates that claims 1 – 2, 4 – 13, 15 – 19 and 22 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Bradley (U.S. Patent 6,496,846), hereafter *Bradley*.

#### **B. Discussion of the Rejection**

Applicant has canceled claims 5, 6, 9, 12, 13, 15 - 19, and 22. Consequently, the rejection of claims 5, 6, 9, 12, 13, 15 - 19, and 22 is rendered moot. Applicant respectfully traverses the rejection of claims 1, 2, 4, 7, 8, 10, and 11. A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior-art reference disclose each element, feature, or step of the claim. See *e.g.*, *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 7 USPQ2d 1129 (Fed. Cir. 1988).

Applicant respectfully traverses the rejection of claims 1, 2, 4, 7, 8, 10, and 11 for at least the reason that *Bradley* fails to disclose, teach, or suggest each element and/or method step in the claims.

**1. Claims 1, 2, and 4**

Turning now to the specific claim rejections, claims 1, 2, and 4 presently stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by *Bradley*.

Applicant respectfully traverses the rejection of claims 1, 2, and 4 for at least the reason that *Bradley* fails to disclose, teach, or suggest each element in the claims.

For convenience of analysis, independent claim 1, as amended, is repeated below in its entirety.

1. An apparatus for performing the addition of propagate, kill, and generate recoded numbers, said apparatus comprising:

a circuitry configured to receive at least a first operand and a second operand, the first and second operands comprising respective first and second propagate, kill, and generate recoded number representations of respective first and second binary operands;

***a first carry-save adder configured to add said first operand and said second operand to generate a third propagate, kill, and generate recoded number representation; and***

***a modified carry-save adder configured to receive the third propagate, kill, and generate recoded number representation, add the separate propagate, kill, and generate bits of the third propagate, kill, and generate recoded number representation, and generate a sum value and a carry value.***

(Applicant's independent Claim 1 - *Emphasis added.*)

Applicant respectfully asserts that *Bradley* fails to disclose, teach, or suggest at least the emphasized elements as shown above. Consequently, claim 1 is allowable.

In this regard, *Bradley* apparently discloses a circuit and a method that encodes the carry-in bit as well as the operand bits for a binary addition of two streams of bits. (See Abstract and FIG. 1 of *Bradley*.) As apparently shown in FIG. 1, the circuit of *Bradley* includes an 8-bit encoder and a 8-bit adder that produce a first SUML and its compliment SUMH, as well as a 5-bit encoder and a 5-bit adder that produce a second SUML and its compliment SUMH. As apparently shown in *Bradley*, the 5-bit SUMH and SUML results are concatenated to the 8-bit SUMH and SUML results. Significantly, *Bradley* fails to disclose, teach, or suggest adding two

propagate, kill, and generate encoded operands to produce a third propagate, kill, and generate operand as recited in Applicant's claim 1. Consequently, *Bradley* does not disclose, teach, or suggest Applicant's claimed ***"first carry-save adder configured to add said first operand and said second operand to generate a third propagate, kill, and generate recoded number representation."*** For at least this reason, *Bradley* fails to anticipate claim 1. Thus, Claim 1 is allowable and the rejection should be withdrawn.

Because *Bradley* fails to disclose, teach, or suggest a third propagate, kill, and generate recoded number representation, *Bradley* cannot disclose Applicant's claimed ***"modified carry-save adder configured to receive the third propagate, kill, and generate recoded number representation, add the separate propagate, kill, and generate bits of the third propagate, kill, and generate recoded number representation, and generate a sum value and a carry value."*** For at least this separate and independent reason, *Bradley* does not anticipate Applicant's claim 1 and is allowable.

Because independent claim 1 is allowable, as argued above, dependent claims 2 and 4 are also allowable. *See In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, Applicant respectfully requests that the rejection of claims 1, 2, and 4 be withdrawn.

## **2. Claims 7, 8, 10, and 11**

Claims 7, 8, 10, and 11 presently stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by *Bradley*. Applicant respectfully traverses the rejection of claims 7, 8, 10, and 11 for at least the reason that *Bradley* fails to disclose, teach, or suggest each method step in the claims.

For convenience of analysis, independent claim 7, as amended, is repeated below in its entirety.

7. A method for processing propagate, kill, and generate representations of respective first and second binary operands, comprising:
  - receiving a carry-in value and a first and a second propagate, kill, and generate representation of respective first and second binary operands;

***adding the first and second propagate, kill, and generate representations to generate a third propagate, kill, and generate representation; and mathematically combining the third propagate, kill, and generate representation and the carry-in value to generate a sum value and a carry value.***

(Applicant's independent Claim 7 - *Emphasis added.*)

Significantly, *Bradley* fails to disclose, teach, or suggest the step of "***adding the first and second propagate, kill, and generate representations to generate a third propagate, kill, and generate representation***" as recited in Applicant's claim 1. Consequently, *Bradley* does not disclose, teach, or suggest at least this step of Applicant's claim 7. For at least this reason, *Bradley* fails to anticipate claim 7. Thus, claim 7 is allowable and the rejection should be withdrawn.

Because *Bradley* fails to disclose, teach, or suggest a third propagate, kill, and generate recoded number representation, *Bradley* cannot disclose Applicant's claimed method step of "***mathematically combining the third propagate, kill, and generate representation and the carry-in value to generate a sum value and a carry value.***" For at least this separate and independent reason, *Bradley* does not anticipate Applicant's claim 7.

Because independent claim 7 is allowable, as argued above, dependent claims 8, 10, and 11 are also allowable. *See In re Fine, supra.* Accordingly, Applicant respectfully requests that the rejection of claims 7, 8, 10, and 11 be withdrawn.

**CONCLUSION**

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all objections and rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims 1, 2, 4, 7, 8, 10, and 11 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby requested. If the Examiner believes that a telephone conference would expedite the prosecution of the application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

  
Robert A. Blaha, Reg. No. 43,502

THOMAS, KAYDEN,  
HORSTEMEYER & RISLEY, L.L.P.  
(770) 933-9500

**APPENDIX A**

**SUBSTITUTE AND ANNOTED DRAWINGS**

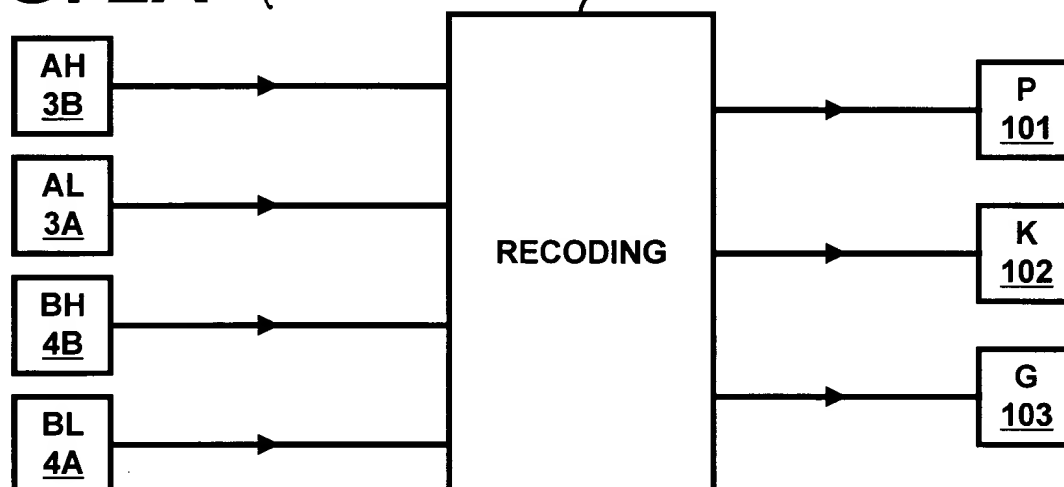


approve to enter  
CD 7/28/03

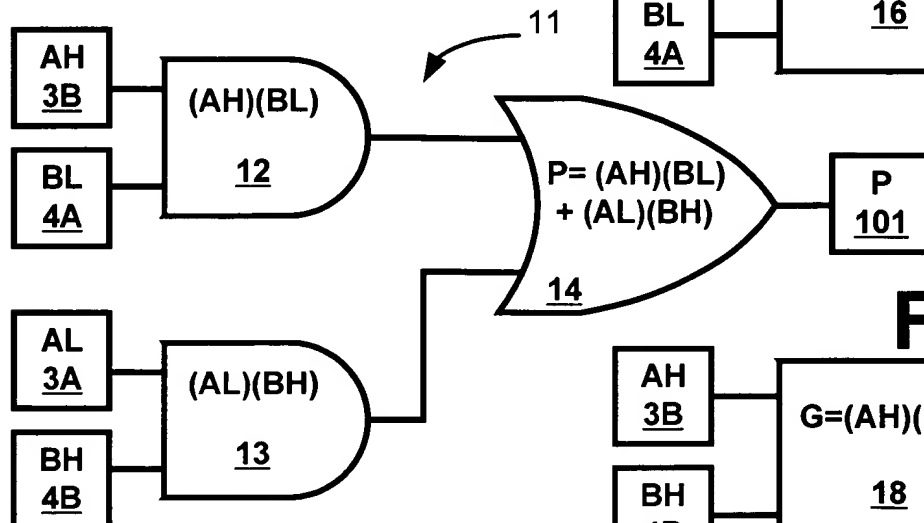
**FIG. 1** (Prior Art) 2

LOGICAL VALUES		MOUSETRAP ENCODING				PKG RECODING			ACTION
A	B	AH	AL	BH	BL	P	K	G	
-	-	0	0	0	0	0	0	0	PRECHARGE/NOT READY
0	0	0	1	0	1	0	1	0	KILL - CLEAR ALL BITS
0	1	0	1	1	0	1	0	0	PROPAGATE - SET 1 BIT
1	0	1	0	0	1	1	0	0	PROPAGATE - SET 1 BIT
1	1	1	0	1	0	0	0	1	GENERATE - SET 2 BITS

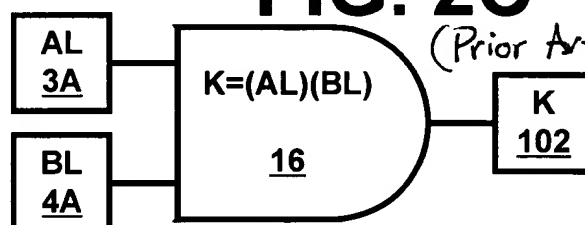
**FIG. 2A** (Prior Art) 9



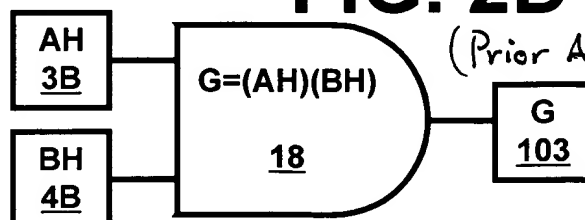
**FIG. 2B** (Prior Art) 11



**FIG. 2C** (Prior Art)



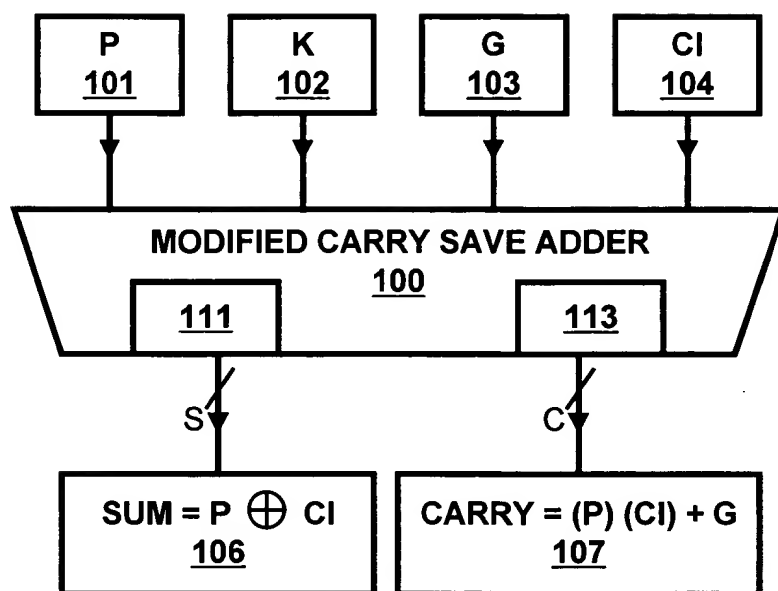
**FIG. 2D** (Prior Art)



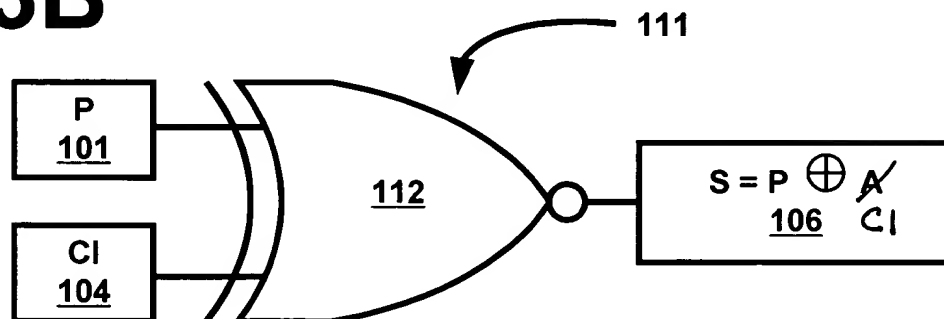




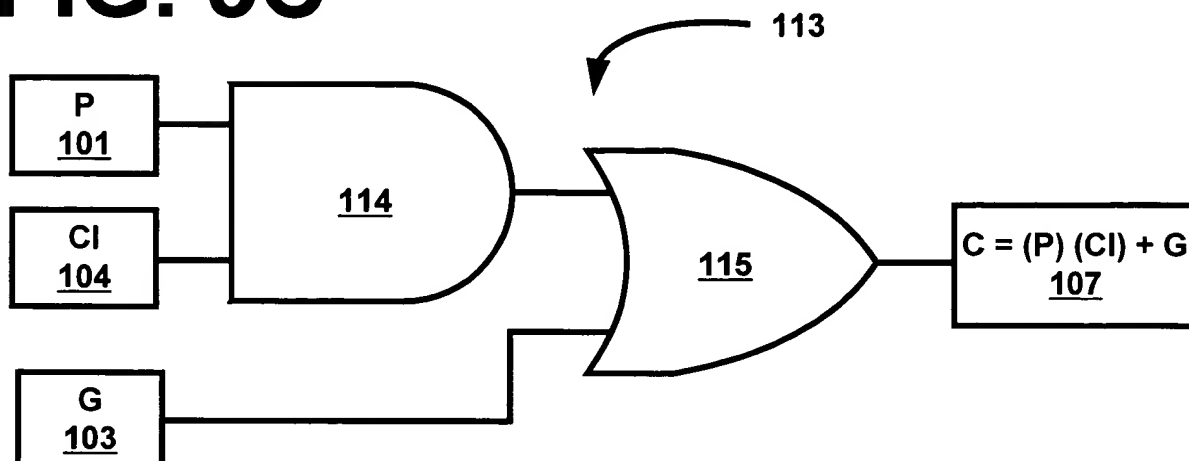
# FIG. 3A



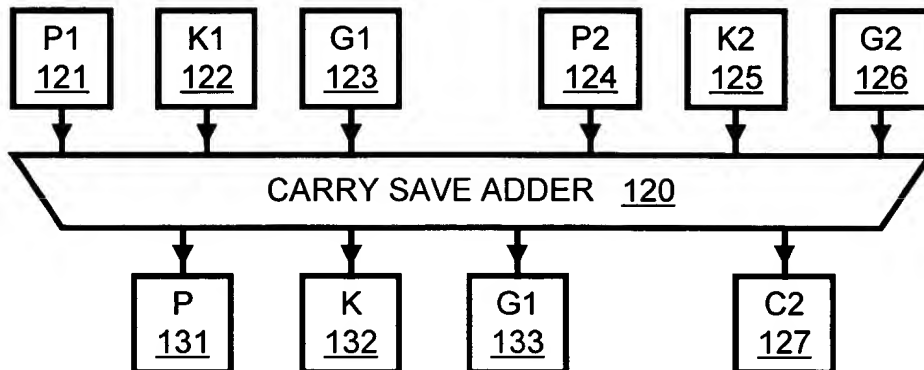
# FIG. 3B



# FIG. 3C



# FIG. 4

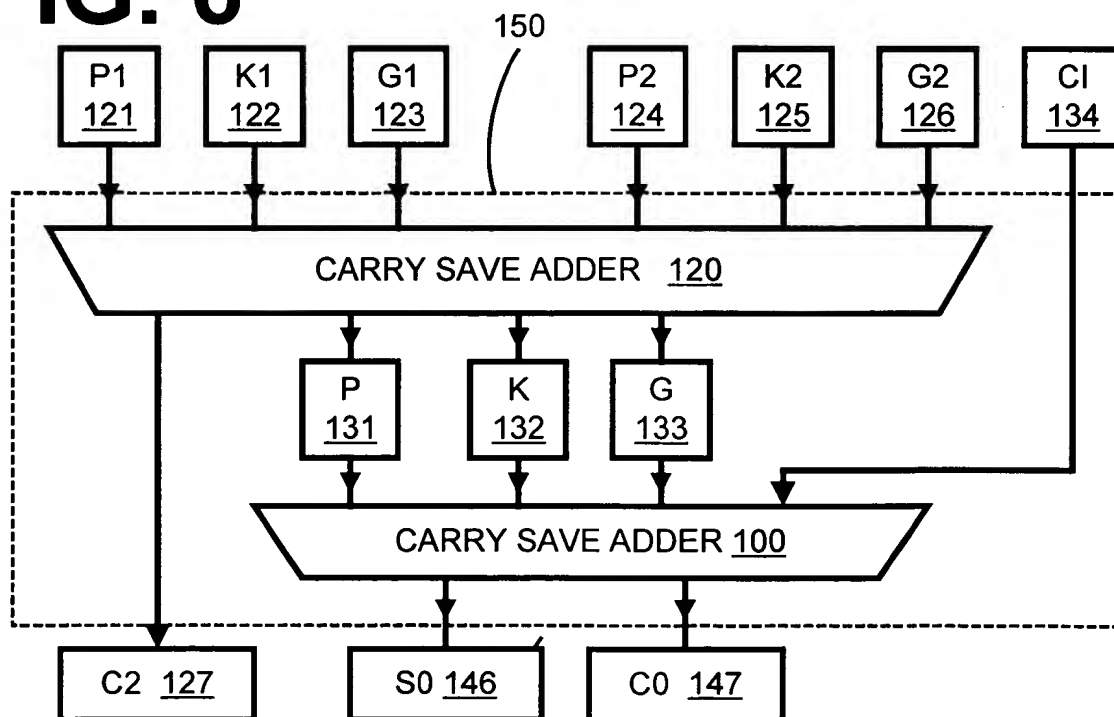


# FIG. 5

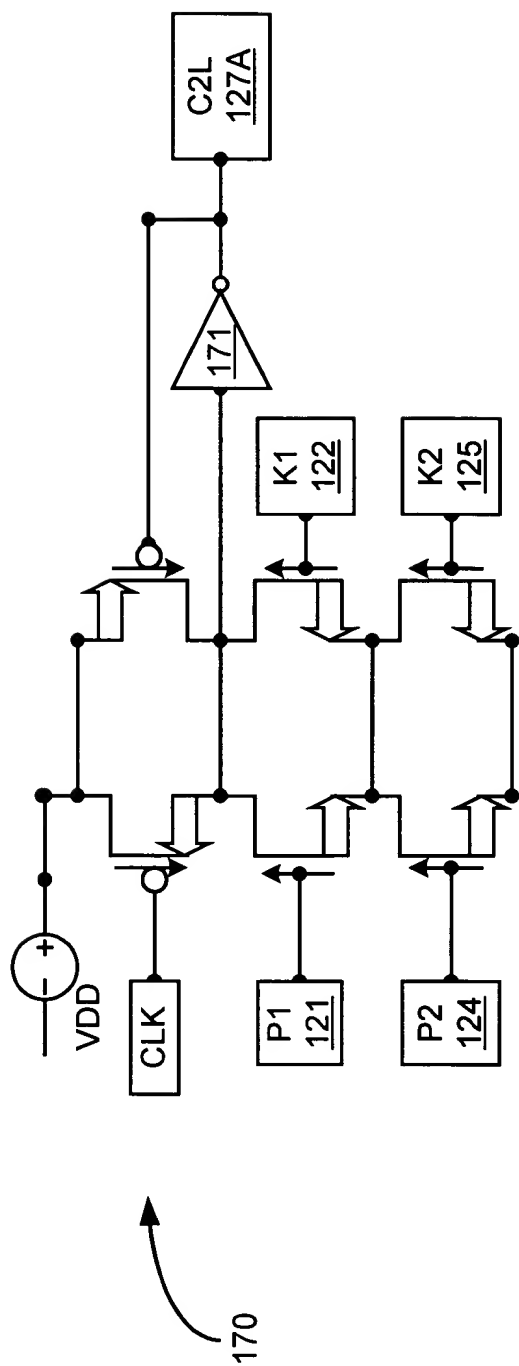
140

G1 123	P1 121	K1 122	G2 126	P2 124	K2 125		C2 127	G 133	P 131	K 132
0	0	1	0	0	1		0	0	0	1
0	0	1	0	1	0		0	0	1	0
0	0	1	1	0	0		1	0	0	1
0	1	0	0	0	1		0	0	1	0
0	1	0	0	1	0		0	1	0	0
0	1	0	1	0	0		1	0	1	0
1	0	0	0	0	1		1	0	0	1
1	0	0	0	1	0		1	0	1	0
1	0	0	1	0	0		1	0	0	0

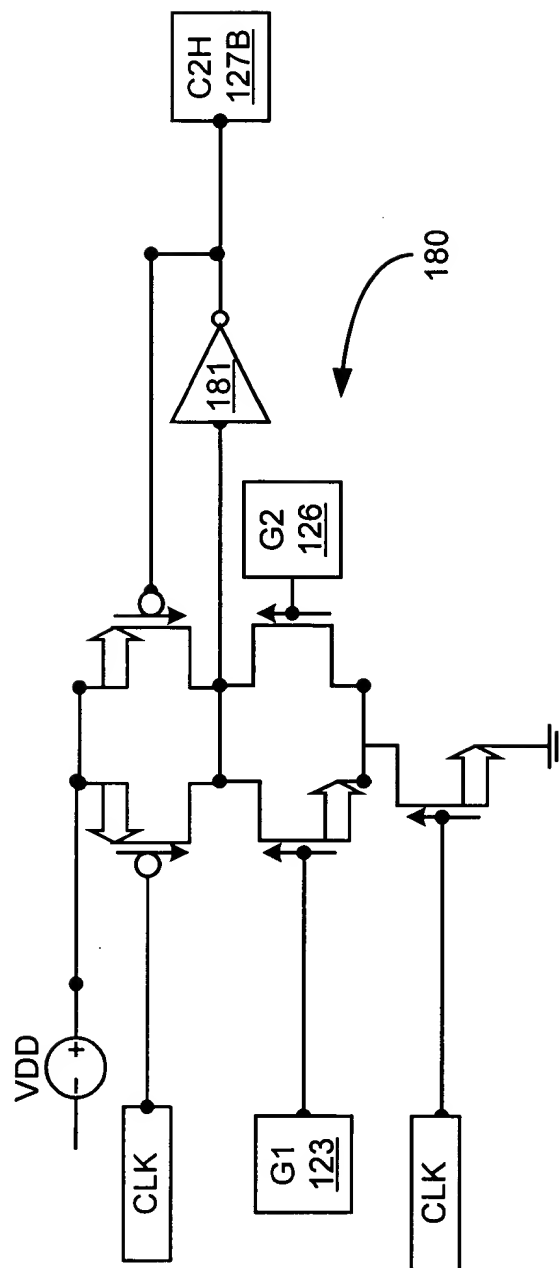
# FIG. 6

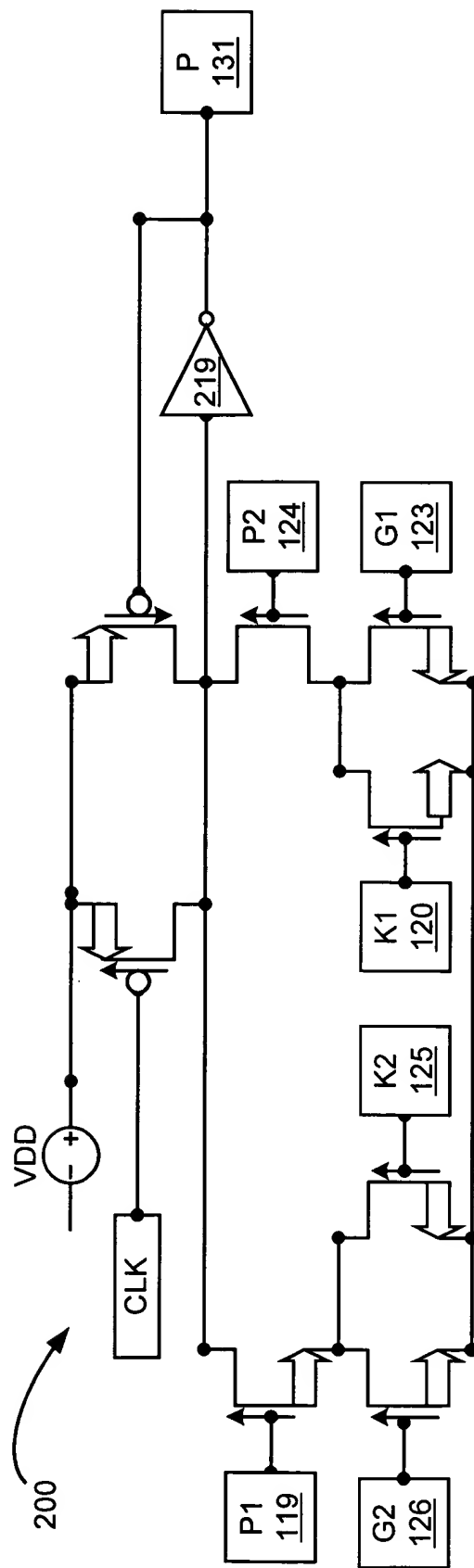


**FIG. 7**



8  
G  
E





210



FIG. 12

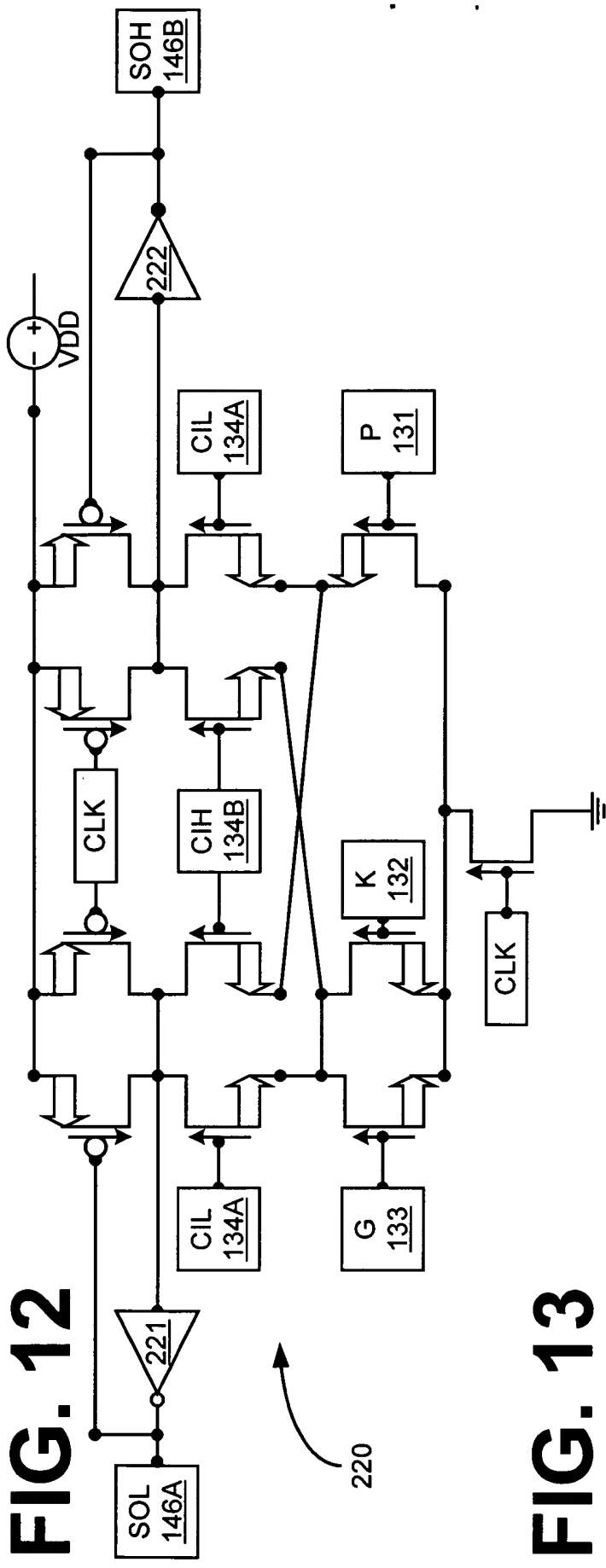


FIG. 13

